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**(54) HEAT RAY CUT-OFF  
GLASS AND ITS  
PRODUCTION**

(57) Abstract:

**PURPOSE:** To obtain a heat ray cut-off glass by laminating a 1st dielectric film on a glass substrate as a 1st layer from the substrate side, a tungsten oxide film thereon as a 2nd layer and a 2nd dielectric film further thereon as a 3rd layer.

**CONSTITUTION:** A transparent glass substrate is defatted, cleaned and dried

and arranged in a vacuum vessel of a sputtering device. Next, the 1st dielectric film of silicon oxide having 2-300nm thickness and refractive index of 1.4-1.9 is film-formed on the glass substrate as the 1st layer by evacuating the vacuum vessel to vacuum and introducing Ar/O<sub>2</sub> mixed gas to a silicon oxide target for sputtering. Next, the tungsten oxide film having 2-300nm thickness, refractive index of 1.9-2.8 and O/W ratio of 2.60-2.98 is film-formed as the 2nd layer by sputtering the Ar/O<sub>2</sub> mixed gas to a tungsten oxide target. Further, the 2nd dielectric film of silicon oxide having 2-300nm thickness and refractive index of 1.4-1.9 is film-formed as the 3rd layer by sputtering the Ar/O<sub>2</sub> mixed gas to the silicon oxide target to obtain the heat ray cut-off glass.

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